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# NEW SYSTEM OF NATURE

## And of the Communication of Substances, as well as of the Union of Soul and Body.

Written in 1695, and translated from the French of G W. LEIBNITZ, by A. E. KROEGER.

(This article gives a clue to the doctrine of the Monadology.)

1. It is several years ago that I conceived this system and communicated about it with learned men, particularly with one of the great theologians and philosophers of our time, who, having learned some of my ideas from a lady of the highest quality, had found them quite paradoxical. But having received my explanation he retracted his criticism in the most generous and pleasant manner in the world; and having approved a part of my propositions, he checked all censure of the others concerning which he did not yet agree with me. Since that time I have continued my meditations as occasion permitted, so that I might give to the public only such opinions as had been well examined; and meanwhile I have also tried to meet the objections raised against my essays on the Dynamics, which have some connection with this subject. But at last, many persons desiring to see my opinions more cleared up, I have hazarded the publication of these meditations, although they are in nowise popular, nor proper to be relished by every kind of minds. I have done so chiefly in order to profit by the judgment of those who are learned in these matters, since it would be too embarrassing to hunt up individually all who might be disposed to instruct me; and I shall always be glad to receive such instructions, provided they exhibit a love of truth rather than passionate prejudice in favor of cherished opinions.

2. Though I am one of those who have long labored in mathematics, I have not ceased from my youth to meditate on philosophy, since it appeared to me always that there must be some means to establish something permanent in it by clear demonstrations. I had penetrated quite far already in the land of the Scholastics, when mathematics and modern writers caused me to leave it at a time when I was yet quite young. Their nice ways of explaining nature mechanically charmed me, and I justly despised the method of those who simply employ forms or faculties by which one learns

nothing. But since then, in trying to get at the bottom of even the fundamental principles of mechanics, in order to render an account of the laws of nature that experience has taught us, I began to perceive that the consideration of an *extended mass* alone would not be sufficient, but that it was necessary to employ moreover the conception of a *force*, a conception which is quite intelligible, though it belongs to metaphysics. Thus it seemed to me that the opinion of those who degrade the beasts into pure machines, though it seems possible enough, is without any likelihood and even against the order of things.

3. At first, when I was not yet free from the yoke of Aristotle, I had held to the void and atoms, for this best fills the imagination; but having found my way back, and after many meditations, I perceived that it is impossible to find *the principles of a true unity* in matter alone, or in that which is only passive, because everything here is simply a collection or mass of parts *ad infinitum*. But since the multiplicity cannot have its reality in aught but *true unities* that originate otherwise, and are quite other things than the points of which it is certain that the continuous could not be composed, I was compelled, in order to find these *real unities*, to have recourse to a formal atom, since a material being could not be at the same time material and completely indivisible, or, in other words, endowed with a true unity. Hence I had to recall and, as it were, reestablish the *substantial forms* so much decried at the present day, but in a manner which rendered them intelligible, and which separated the proper use to be made of them from the abuse that has been made of them. I discovered then that their nature consists in force, and that from it there arises something analagous to sensation and desire (*appetit*), and that hence we must conceive them similarly to the conception which we have of *souls*. But since the conception of soul must not be used to account for the detail of the economy of the animal *body*, I considered that I must also not use these forms to explain the particular problems of nature, though they are necessary to establish true general principles. Aristotle calls them first entelechies. I call them, perhaps more intelligibly, *primitive forces*,* that

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* Afterwards Leibnitz called them monads.

contain not only the *act*, or the complement of possibility, but moreover an original *activity*.

4. I saw that these forms and these souls must be indivisible, just as our spirit is; and, indeed, I recollected that Saint Thomas held this view in regard to the souls of animals. But this truth renewed great difficulties concerning the origin and duration of souls and forms. For every substance that has a true unity, as it cannot have either its beginning or its end otherwise than through a miracle, it follows that they could begin only by creation and end only by annihilation. Thus I was obliged to recognize that, excepting the souls that God wants expressly to create hereafter, the constitutive forms of substances must have been created together with the world, and that they subsist forever. Thus some scholastics, like Albert the Great and Jean Bacon, had a glimpse of the truth regarding their origin. And the matter ought not to appear extraordinary, since it does not attribute to the forms anything but that permanency which the followers of Gassendi accord to their atoms.

5. I thought, however, that it would not do to mix indifferently with these forms the spirits and the rational souls that are of a superior order and have incomparably more perfection than the forms of matter, being rather like small gods in comparison, made in the likeness of God and having in them some rays of the light of the divinity. This is why God governs the spirits as a prince governs his subjects, or even as a father takes care of his children; whereas of the other substances he disposes as an engineer manages his machines. Thus the spirits have particular laws which place them above the changes of matter; and it may be said that everything else is made only for their sake, these very changes being regulated to correspond with the felicity of the good and the punishment of the bad.

6. Nevertheless — to return to the ordinary forms or the *material souls*—this permanency, which we must attribute to them in place of that permanency which has been attributed to the atoms, might lead to a doubt as to whether they do not pass from one body to another body, which would be a *metempsychosis* somewhat like the transmission of movement and of species which some philosophers have believed in.

But this idea is very far from the nature of things. There is no such transmission; and it is here that the *transformations* of Messrs. Swammerdam, Malpighi, and Leewenhock, who belong to the most excellent observers of our times, have come to my aid, and have made it more easy for me to admit that the animal, and indeed every other organized substance, do not begin to exist when we believe they do, and that their apparent generation is nothing but a sort of augmentation. I have observed that the author of the *Recherche de la Vérité*, Mr. Regis, Mr. Hartsoeker, and other able men, have not been far from this opinion.

7. Still there remained the great question what these souls or forms might become after the death of the animal, or by the destruction of the individual of the organized substance; and it is this which causes most embarrassment, since it appears not at all reasonable that the souls should remain useless in a chaos of confused matter. This has led me finally to consider that there is only one sensible conclusion to arrive at, namely, that of the conservation not only of the soul, but moreover of the animal itself and its whole organic machinery, no matter whether the destruction of its grosser parts may have reduced it to a littleness, which, however, escapes our perception no more than it did before the animal was born. Thus no person is well able to point out the true time of death, which for a long time may pass for a simple suspension of known actions, and in point of fact is never anything else in the lower animals; witness the *resuscitations* of flies that were drowned and afterwards buried in pulverized chalk, and many singular examples that illustrate clearly enough that there would be may other resuscitations, and of far greater extent, if men were in a condition to mend the machine. It seems, indeed, as if it must have been something like this which the great Democritus has spoken of, however much of an Atomist he was, and although Pliny ridicules him on that account.

It is, therefore, natural that the animal having been always alive and organized, as persons of great penetration now begin to recognize, must also remain so always. And since there is no first birth or entirely new generation of an animal, it follows that there can also be no final extinction or complete death — speaking with metaphysical strictness; — and that hence, in place of the transmigration of souls, there occurs only a transformation of the same animal according to the way in which the organs are differently folded, or more or less developed.

8. Nevertheless the rational souls follow far higher laws, and are exempt from all that which could make them lose the quality of citizens of the empire of spirits; God having arranged this so well that all the changes of matter could not make them lose the moral qualities of their personality. Indeed it may be said that everything tends to the perfection not only of the universe in general, but also of those creatures in particular which are destined to such a degree of happiness that the universe finds itself interested therein in virtue of the divine goodness, which communicates itself to each one as much as the supreme wisdom may permit.

9. Concerning the ordinary course of the animals and other corporeal substances, of which men have hitherto believed the entire extinction, and the changes whereof depend more upon mechanical rule than moral laws, I observe with pleasure that the ancient author of the book *On Diet*, which has been attributed to Hippocrates, had some notion of the truth when he stated in express terms that the animals neither are born nor die, and that those things which have been held to begin and to perish simply appear and disappear. This was also the opinion of Parmenides and Melissus, as Aristotle reports: for these ancients were more thorough than we believe.

10. I am quite well disposed to render justice to the moderns, nevertheless I find that they have carried their reform too far; amongst other things, in confounding natural with artificial things, which they did because they had not sufficiently high ideas of the majesty of nature. They conceived that the difference between the works of nature and our own works was only one of degree. This has led very recently a very able man, the author of *Conversations on the Plurality of Worlds*, to say that in regarding nature more closely we find her less admirable than we had believed, and indeed only like the shop of a workman. But I believe that this does not give a sufficiently worthy idea of nature, and it is only my system which teaches men to know at last the true and immense dis-

tance between the smallest productions and mechanisms of the divine wisdom and the greatest works of art of a limited intelligence; this difference being not of degree, but one of kind. It should therefore be known that the machines of nature have a truly infinite number of organs, and are so well provided and proof against all accidents that they cannot be annihilated. A natural machine remains always machine in its smallest parts, and, what is more, remains always the same machine it has been, becoming transformed only by the different unfoldings it receives, being now extended and then again compressed and as it were concentrated until we believe it to have become lost.

11. Furthermore, by means of the soul or the form there exists in them a true unity, which corresponds to that which we call Ego in us. But this could not be if they were works of art, or if they were simple masses of matter, however highly organized, in which case they could be considered only as an army, or a troop, or a lake full of fishes, or a watch composed of springs and wheels. But if there were no true or substantial unities in them, there would be nothing substantial or real in the agglomeration. It was this which compelled Mr. Cordemoi to leave Descartes and accept the doctrine of atoms of Democritus, in order to find in them a true unity. But material atoms are contrary to reason, besides being composed of parts; since the invincible attachment of the one part for the other—if it could be rationally conceived or suffered—would not destroy their diversity. Thus there are only *substantial atoms*—that is, real and absolute unities—destitute of parts, and the sources of actions as well as the first absolute principles of the composition of things and the last elements of the analysis of substances. One might call them *metaphysical points*. They have *something vital* in them and a sort of *perception*, and the *mathematical points* are their *points of view* to express the universe.

But when the corporeal substances are compressed, all their organs together make only one physical point, in our opinion. Thus the physical points are only in appearance indivisible; the mathematical points are exact, but they are mere modalities; only the metaphysical or substantial points—constituted by the forms or souls—are exact and real, and without them there would be nothing real, since without true unities there would be no multiplicity.

12. After having established these things, I thought I had entered port; but when I set to meditating on the union of soul and body, I was, as it were, cast back upon the open sea. For I did not find any means to explain how the body could exercise any influence upon the soul, and *vice versa;* nor how one substance could communicate with another created substance. Mr. Descartes had left this matter untouched, so far as one can glean from his writings; but his disciples, seeing that the common opinion on this subject was inconceivable, supposed that we felt the qualities of bodies because God caused thoughts to arise in our souls on the occasion of the movements of matter, and that when our souls in their turn moved matter it was God who moved the matter for them. Finally, since the communication of movements seemed to them impossible, they believed that God gave movement to the one body on the occasion of the movement of another body. It was this they called the *System of Occasional Causes*, a system that was put quite in vogue by the neat reflections of the author of *Researches after Truth.*

13. It must be confessed that these Cartesians have well grasped the difficulty in their way, by stating what cannot be; but it does not appear that they have removed the difficulty by explaining that which in fact occurs. It is quite true that there is no real influence exercised by one created substance on another one (speaking with metaphysical strictness), and that all things with all their realities are continually produced by the power of God; but in order to solve these problems it is not enough to employ a general cause and to call to aid what is called a *Deus ex machina.* For to do this without giving any other explanation, which might be derived from the order of secondary causes, is simply to have recourse to miracles. But in philosophy we should endeavor to give reasons in explaining how things do occur by divine wisdom in conformity with the conception of the subject under consideration.

14. Being, therefore, obliged to agree that it is not possible that the soul, or any other true substance, can receive anything from without, except it be by divine omnipotence, I was

insensibly led to an idea which surprised me, but which seemed inevitable, and which has, in fact, very great advantages and very considerable beauties. This was, that we must then come to the conclusion that God created the soul, or every other real unity, in such a manner as to have everything arise in it from its own proper nature with a perfect *spontaneity* in relation to itself, and yet at the same time with perfect *conformity* to the outside things. That thus our internal perceptions—that is, those in the soul itself, and not in the brain or in the subtle parts of the body—being nothing but phenomena related to external things or true appearances, and like well regulated dreams—that these internal perceptions, therefore, in the soul itself, come to the soul through its own original constitution, that is to say, through that representative character (capable of expressing outside things by relation to its organs) which was given to it at its creation and which constitutes its individual character. Thus it is that each of these substances—each representing precisely the whole universe in its own way and according to a certain point of view, and the perceptions or expressions of the external things reaching the soul in this point by virtue of its own laws, as of a world in itself, and as if nothing existed but God and itself (to use the mode of expression of a certain person of elevated mind and whose sanctity is everywhere recognized)—must be in perfect accord with all others, whereby the same effect is produced as if they all communicated with each other by a transmission of species or of the qualities, as the vulgar philosophers imagine. Moreover, the organized mass, wherein the point of view of the soul exists, being expressed more nearly, and finding itself reciprocally ready to act of itself according to the laws of the bodily machine in whatever moment the soul wills it,—neither one interfering with the laws of the other,—the intelligence and the blood have precisely those movements which are necessary to respond to the passions and perceptions of the soul. It is this mutual *rapport*, regulated in advance in each substance of the universe, which produces what we call their communication, and which alone constitutes the *union of body and soul.* It is thus that we can understand how the soul has its seat in the body by an immediate presence; a presence that could not be greater, since the soul is there just as the unity is in the result of the unities, which is the multiplicity.

15. This hypothesis is very possible. For why might not God have given at first to the substance a nature or internal force which produced in it perfect order—just as if it were a *spiritual or formal automaton, but free* in that substance which partakes of reason—all that which might happen to it, that is, all those appearances or expressions which it ever might have, and this without the aid of any creature;—all the more since the nature of the substance demands necessarily and embraces essentially a progress or change, without which it would not have the power to act? The nature of the soul being representative of the universe in a very exact manner, though more or less distinct, the sequence of the representations which the soul produces will naturally correspond with the sequence of the changes in the universe itself; just as, on the other hand, the body has been accommodated to the soul for those occurrences wherein the soul is conceived as acting outside of itself, which is all the more reasonable since the bodies are made only for those souls that are capable of entering into communion with God and of celebrating his glory. Thus as soon as one sees the possibility of this *hypothesis* of accords, or harmonies, one sees also that it is the most reasonable one, giving a marvellous idea of the harmony of the universe and of the perfection of God's works.

16. There is moreover this great advantage, that, instead of saying we are free merely in appearance and in a manner sufficient for practical purposes, as many intelligent persons have held, we ought rather to say that we are determined only in appearance, and that (speaking in metaphysical strictness) we are perfectly independent of the influence of all other creatures. This puts into a wonderfully clear light, morever, the immortality of our soul and the perennial uniform conservation of our individuality, always well regulated by its own nature and guarded against all outside accidents, no matter how much it looks to the contrary. Never did a system establish our dignity with greater evidence. Every spirit being a world in itself—sufficient for itself, independent of all other creatures, enveloping the infinite, and expressing the universe—is as durable, as subsistent, and as absolute,

as the very universe of all creatures. Hence we must hold, that we should always keep in mind the most proper manner of contributing to the perfection of the society of all the spirits who realize their moral unity in the city of God. We find here also a new proof of the existence of God, a proof of surprising clearness. For this perfect accord of so many substances that have no communication amongst themselves, can result only from a common cause.

17. Besides these advantages which recommend this hypothesis, we may say that it is more than an hypothesis, since it seems scarcely possible to explain things in another way intelligibly, and since many great difficulties that have hitherto puzzled the minds of men seem to disappear when this theory has been well comprehended. The usage of ordinary speech is not interfered with particularly by this. For we can well say that the substance, the disposition whereof gives a reason for the change in an intelligible manner—in such a way that we can judge that all the others have been accommodated to it from the beginning according to the decrees of God—is that substance which we must conceive as one that acts upon others. Thus the action of one substance upon the other is not an emission or the transplantation of an entity, as the vulgar believe, and cannot be reasonably taken for anything else than I have described. It is true that we can well conceive in matter the emission and reception of parts, by which we have reasons to explain mechanically all the phenomena of Physics; but since the mass of matter is not a substance, it is clear that the action as related to the substance can be only in the way I have said.

18. These considerations, however metaphysical they may appear, have still further a marvellous application to physical sciences by establishing the law of movement as my *Dynamics* may show. For we may say that in the collision of bodies each suffers only by its own repulsion,—the cause of the movement that is already in it,—and so far as the absolute motion is concerned nothing can determine it mathematically since everything terminates in *rapports*. Hence there is always a perfect equivalence of hypotheses, as in Astronomy. Thus, whatever number of bodies you take, it is perfectly arbitrary to assign rest or a specified degree or motion to whatever

body you may select; and no phenomena of straight, circular or composite motion can refute you. Still it is reasonable to attribute to bodies true motion in accordance with the supposition that we should account for phenomena in the most intelligible manner, this denomination being conformable to that conception of action which we have just endeavored to establish.

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# GOETHE'S STORY OF THE SNAKE.

Translated from the German of CARL ROSENKRANZ, by ANNA C. BRACKETT.

[The German word *Mährchen* can be properly rendered in English neither by Fable nor Legend. *Fairy-Story* would most nearly express its meaning, but this name does not seem applicable here. The introductory remarks of our author must be understood, however, as referring to that class of fictions termed Fairy-Stories in English, though in many of them no fairies, properly speaking, appear. I have translated it simply Story.—*Tr.*]

At the beginning it should be said that such stories, as a class, belong to epic poetry, and among nations that possess an epic poem, this may be only an organized compilation of them; as among the Greeks, for instance, the Odyssey embodies the fabulous literature of that people. Among those who have no proper mythical religion they fill the place of the myth, just as among those who possess no real epic poetry they answer its purpose. The stories of the gods of Greenland and Kamschatka belong to this class, and among the Westphalians and the Lithuanians we find them even now instead of traditional epics. They are the epics of childhood. As to their execution, however fantastic they may be, the play of the fancy must be based upon a certain amount of truth to nature, and this necessity has been perceived and acted upon by Goethe in this case. The river, the cavern, the veins of metal, the will-o'-the-wisps, the snake, the changes in the light at different times of the day,—all these are painted with the purest, most objective truth to nature. It is this firm basis which persuades us into accepting without objection the numerous transformations, and in this foundation Goethe has an infinitely strong support of the purest